

Scientific Note

THE BANDED ALDER BEETLE IN NATURAL AND URBAN ENVIRONMENTS (COLEOPTERA: CERAMBYCIDAE)

Rosalia funebris Motschulsky, the banded alder beetle, is a striking black and white insect [illustrations in situ, see: Chemsak J. & E. G. Linsley. 1971; Pan-Pacif. Entomol., 47: 149-154; Linsley, E. G. 1964. Univ. Calif. Publ. Entomol., 22; Linsley, E. G., J. N. Knull & M. Statham. 1961. Amer. Mus. Novitates, 2050], in a genus noted for large size and conspicuous coloration. It was among the first insects discovered and named from western North America. It was captured at Sitka, Alaska, during the early Russian survey expeditions and named by the Russian entomologist Motschulsky in 1845. It was not reported by American entomologists until 12 years later [Le Conte, J. L. 1857. Vol. 12, Book 2, Part 3. Zoological Rpt. 1, pp. 1-72. House of Representatives, 36th Congress, Ex. Doc 56.], when Le Conte recorded it from Oregon in an account of the insects collected during the Missouri to Pacific railroad survey. The next American record [Le Conte, J. L. 1869. Ann. Mag. Nat. Hist. (4)4: 369-385] was from Vancouver Island. Subsequently, its known geographical range has been extended southward to California [Casey, T. L. 1912. Memoirs on the Coleoptera, 3: 313] and south-eastward in the southern Rocky Mountain region into Arizona (Linsley et al., 1961) and New Mexico (Casey 1912). For a map of the presently known distribution, see Linsley (1964).

Beyond the fact that adults gather in small aggregations, on freshly cut logs and recently dead trees, for mating and oviposition during warm, mid-summer nights, little is known of their life history. Their adult environment is the streamside habitats where their host trees, usually alder (*Alnus*) but sometimes apparently California laurel (*Umbellularia*), grow. Of special interest, then, is their observed attraction to artificial environments provided by man. One such attractant is paint. First reported [Essig, E. O. 1948. Pan-Pacif. Entomol., 19: 91-92] and based on the collection of large numbers of both sexes attracted to a paint shop in Ukiah, California, on a hot summer day, this unique behavior was confirmed by Chemsak & Linsley (1971) at a prefabrication building plant 7.3 km (4.5 mi) north of Santa Rosa, California. Again, both sexes were attracted to the site, where they were drowned in empty paint cans or resting immobilized in the paint shed. When captured and placed in plastic bags the sluggish ones regained their mobility and became very active.

The second unique behavior pattern involves the aggregating of the sexes on the walls of buildings in a dense urban environment. In response to reports received in early July, 1970, Chemsak and Linsley visited a bank in Santa Rosa, where the beetles were gathering and attracting local attention. Upon their arrival at 11:05 h the beetles were resting and sluggish, but by noon the sun shone brightly on the front of the building and the beetles moved into the shade. Bank officials stated that the beetles had been coming over a period of 10 days to 2 weeks, reaching a peak during a hot spell when the daytime temperatures rose to 38.8° C (102°F). The building had been newly painted recently.

These observations may now be supplemented with others from Oregon, by Haryana Chilstron, an exhibitor of live insects:

“First noted in the summer of 1969, was a single adult male resting conspicuously on the newly painted wall of a stucco or concrete building in a city park in West Portland in a predominantly residential area a few blocks southwest of the Willamette River. At the time the significance of the sighting was not recognized. However, between 1980 and 1993, usually in late July and early August, both sexes were repeatedly brought to the Washington Park Insect Zoo by visitors and zoo personnel who were puzzled by the fact that all were found on walls of buildings and other structures. Most were people from southwest Portland or adjacent communities west of the Willamette River, although the area has numerous creeks running through it with abundant *Alnus* and *Salix*, which may have provided a source for the beetles.”

In all of these situations, the common denominators are: (1) buildings or other man-made structures, and (2) in at least some cases the presence of fresh paint (status of the others not known). This suggests that a volatile ingredient, capable in the California examples of being carried over a very significant distance, was acting as an attractant, because a careful search of both areas failed to reveal a streamside site or a growth of trees of either of the known hosts. The volatile material must mimic a specific sex pheromone because a host attractant would bring other insects. Further, it must be a sex pheromone that attracts both sexes—not unknown but not the usually observed case in which the female attracts the male.

Finally, it has been suggested [Ross, E. S. 1993. *Pacific Discovery*, Winter 1993: 40–41] that these beetles may have served as a model (otherwise unknown) for the Hopi Indian Katchinas known as hamo clowns. Ross (1993) illustrates both the indian ceremonial dancers and the beetle and coins the name “banded alder beetle,” which we have adopted. The resemblance of *Rosalia* to the Hopi Katchinas, although not previously reported, was noted independently by Celeste Green (artist and entomological illustrator), Joan Quay (artist and scientist), and by E. G. and J. M. Linsley, who over a period of 15 years assembled a collection of these dolls (some eating watermelon after the dance, which gave them another common name, “the glutton”).

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